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ABSTRACT

This handbook, the second volume in a series of three publications on distance education, presents guidelines on structures and strategies in organizations and the processes of materials development. A checklist of specific items is included for each topic addressed. The first guidelines are addressed to policymakers and senior administrators and cover distance learning systems models, the target clientele, distance learning processes and their resource allocations inter-institutional coordination, management of production and distribution, and extending the clientele and range of programs. The second set of guidelines was designed to assist in the preparation of distance learning materials, and uses excerpts from Volume III (Exemplar Materials) to illustrate some points. Topics include establishing needs, setting objectives, resources and constraints, materials preparation, validating or field testing, consultation, evaluation and revision of materials, and implementation. (LMM)

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ASIAN PROGRAMME OF EDUCATIONAL INNOVATION FOR DEVELOPMENT **APEID**

ED240990

DISTANCE LEARNING FOR TEACHER EDUCATION

Report of a Technical Working Group Meeting, Islamabad, Pakistan, 4-16 November 1981

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Volume II: Guidelines on development of materials

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The APEID Technical Working Group Meeting
on Distance Learning Materials
for Pre-service and In-service Teacher Education

was jointly organized by

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and

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PREFACE

In accordance with the work plan of the Asian Programme of Educational Innovation for Development (APEID) for 1981, a study group of experts form Asia and the Pacific was convened to an APEID Technical Working Group Meeting on Distance Learning Materials for Pre-service and In-service Teacher Education from 4 to 16 November, 1981, at the Allama Iqbal Open University, Islamabad, Pakistan.

The objectives of the Technical working Group Meeting were:

1. To review and examine the instructional materials used in distance learning;
2. To select and improve materials relevant to core curriculum of teacher education;
3. To develop new materials for pre-service and in-service education; and
4. To develop a handbook on preparation, selection, use and renewal of distance learning materials.

Participants of the Technical Working Group were from Australia, India, Indonesia, Maldives, New Zealand, Pakistan, Philippines, Sri Lanka and Thailand.

This handbook is a companion volume to the Report of the Technical Working Group and its other companion volume of Selected Examplar Materials. It contains two sets of Guidelines. One is addressed to the policy makers and senior administrators who decide whether distance learning is an appropriate strategy of tackling their problems of educational access, what systems to adopt, when the system should begin and what resources therefore need to be allocated for the successful operation. The other is addressed to teachers and others responsible for providing learners with distance materials from which they can learn efficiently and comfortably.

The contribution of the participating countries, whose experiences and exemplar materials were the main resources for this handbook are acknowledged with gratitude. Special thanks are due to the Allama Iqbal Open University for providing the venue and supportive staff which made possible a productive working climate for the meeting.

I. GUIDELINES ON ALTERNATIVE STRUCTURES AND STRATEGIES IN ORGANISATIONS

Various alternative approaches to establishing distance learning systems for teacher education, both pre-service and in-service exist. Therefore the experience of group members was reviewed and it was resolved that the guidelines should cover the following matters:

1. Distance learning systems models;
2. The target clientele;
3. Distance learning processes and their resource implications;
4. Inter-institutional coordination;
5. Management of production and distribution; and
6. Extending the clientele and range of programmes and to add a checklist for these items.

A. Distance learning systems models.

Introduction: Within the Asian and Pacific region there is a variety of distance learning systems, some of them for teachers. Programmes before 1970 relied mainly on correspondence but if they were integrated with internal teaching at an existing institution, its facilities were sometime used for an element of face-to-face instruction. There are examples in Australia, India and New Zealand. Once the first open leraning institutions were developed, their approaches and styles, that encourage entirely new institutions to develop non-traditional curricula through multi-media teaching, attracted attention throughout Asia and the Pacific and several institutions have been established in the Region adopting an 'open university' model (e.g. in Pakistan, Thailand, Sri Lanka and Deakin University in Australia. Interest grew in both kinds of institutions as the advantages of distance learning became clear i.e. that people in remote areas could be given access to education and training in a relatively economical way.

Two major models: Two different approaches may therefore be distinguished:

- in 'integrated' model, in which the same institution offers both internal and distance teaching.
- the 'separate' model where a new institution is established exclusively for distance teaching.

They are not opposites to be too sharply contrasted. Between them are programmes with features of both. Some 'integrated institutions offer only a selection of their courses at a distance. Some offer some courses for distance learners different from those for internal students, or retain courses that have changed internally. Of course, not all programmes are in colleges. Many distance learning programmes are arranged by ministries to aid a particular group of teachers. Some may be broadcasting not college based, with the radio or television programme providing the major content, with print material serving in a supporting role.

Main features of the major models: The major alternative models can be compared in respect of some key features:

Curriculum: The 'integrated' model relies on an existing curriculum; the 'separate' model has the opportunity to develop an entirely new curriculum, untrammelled by the attitudes of academics familiar only with internal teaching;

Standards: The 'integrated' model offers established standards of student performance while the 'separate' model must assert and validate its standards;

Teaching methods: While the 'integrated model often incorporates elements of internal teaching, the 'separate' model can organise learning in innovative ways that suit its objectives. In the 'integrated' model distance learning materials sometimes become resource materials to improve internal teaching.

Staff: In the 'integrated' model, the addition of distance teaching to their work may prove difficult for academic staff accustomed only to face-to-face teachings; this may show in unimaginative distance teaching. Staff in the 'separate' model have an initial commitment to distance teaching, but since their own previous learning and teaching was probably internal, they may be naive at the beginning.

Staff training: in both models, staff training and development are needed.

Non-formal education: An 'integrated' institution may not wish to extend its clientele into non-formal education; the separate model may be more obliged to do so or be more adventurous.

Programme development: Extending the distance learning programme in an 'integrated' institution may be slow and reluctant. In the 'separate' models, the developmental ambitions of the institution decide the speed of growth.

Finance: In the 'integrated model, the distance learning system may, because of the attitudes of uncommitted staff, find it difficult to claim its fair share of resources; in the 'separate' model, the competition for funds moves outside the institution.

Some Implications: From the decision to introduce a programme based on one other of these models (or some intervening structure) will follow certain major implications about:

Staffing: Either distance learning must be added to the responsibilities of existing teachers of internal students or a new staff needs to be recruited or a nucleus of full-time distance educators may be recruited, assisted by selected contract staff for particular materials. Whatever the choice, training in distance learning methods will be needed.

Buildings: The space and building needs of distance learning systems are less than for conventional teaching, but space for permanent staff, for materials production and storage of materials must be found.

Organisation: Apart from the establishment of a central materials production and distribution unit, the organisation may need to provide for efficient student support services in the localities where the students are found.

Finace: There are strong arguments that distance learning systems are economical. They are an inexpensive way of adding to the student population groups (such as teachers in remote areas) to whom government wishes to offer education. But they are additional

and their programme will need additional finance. Only rarely is distance learning substituted for inefficient internal programmes. Good quality is needed: otherwise the good intentions of students and the resources used to teach them badly will be wasted. Distance education needs sufficient investment if it is to yield its dividend.

Evaluation: Among the structures of distance learning, some feedback mechanisms may be needed to check the quality, retention rates and success of the programme, and to inform the public of these achievements.

Checklist A:

Does/will your distance learning system

1. _____ provide courses : only for teachers?
   _____ : for teachers and others?
2. _____ integrate distance teaching with internal teaching in one institution?
   _____ have a 'separate' institution?
   _____ exist within a ministry?
   _____ exist in some other framework?
3. _____ use an existing curriculum?
   _____ develop its own curriculum?
4. _____ offer established qualifications?
   _____ develop new qualifications?
   _____ not offer qualifications?
5. _____ use existing instructional materials?
   _____ develop specific instructional material for the distance mode?
   _____ use distance learning materials for internal teaching?
6. _____ reserve some parts of courses for face-to-face instruction?
   _____ teach the entire course in the distance mode?
7. _____ ask the same teachers to develop materials internally and at a distance?
   _____ recruit full time staff exclusively for distance teaching?
   _____ use outside staff as part-time contract materials production staff?

8. _____ give training in distance teachir.g to : full-time staff?
   _____ : part-time staff?
   _____ : local tutors?

9. _____ _____ expect to extend into : qualification-based studies for teachers?
   _____ : non-qualification studies for teachers?
   _____ : formal programmes for non-teachers?
   _____ : non-formal programmes for non-teachers?

10. _____ _____ receive funds : direct from its financial sources?
    _____ : indirectly as part of the allocation to a wider programme or institution?

B. Target clienteles

Who are the clients? The target clientele, in this case teachers in pre-service or in-service studies, should be clearly identified. Its needs – and its resources of experience, maturity and motivation – must be recognised when the distance learning system is established. Factors to be considered are:

1. Teaching experinece and previous professional training;
2. Previous academic standard;
3. Location and the quality of mail service;
4. Presence or absence of others who can help with difficultes;
5. Access to study centres, library and audio-visual resources; and
6. Sex, language and relevant cultural factors.

Many distance learning systems begin by serving the needs of teachers. Among participant countries the following groups of teachers were identified as target clienteles for distance learning:

Untrained teachers: who receive training and a qualification: some begin teaching direct from school, perhaps after relatively little schooling themselves; others are graduates going straight from university to school.

Untrained teachers: who need upgrading or support in a particular teaching skill or content area or whose academic background needs improvement before they undertake training.

Trained Teachers : who need an input to extra professional knowledge or skill
: who wish to improve their formal qualifications, their status or

salary, or transfer to other career tasks; some may be graduates seeking higher degrees.

Trained and Untrained Teachers: who seek personal knowledge and qualifications in programmes not exclusively for teachers.

If a programme serves the needs of several groups, a sequence of distance learning programmes for teachers may become the steps in the 'continuing education' of teachers at various points in their careers.

Access: When a programme is mounted, should all have access? In broadcasts anyone can listen. In systems involving a mix of materials and specific commitment of time, only a quota of places may be offered. Criteria for selection could include:

1. remoteness: teachers in remote areas may be preferred to those who have access to internal study;
2. regional quotas: certain regions or districts may receive a quota to spread the opportunity and knowledge more evenly;
3. admission qualifications: certain levels of academic qualification or professional experience may be required; and
4. minimum study groups: a sufficient number of students in a district may be needed to ensure an effective and economical study group.

Checklist B:

Are the teachers who are/will be distance learners:

1. _____ trained teachers?
   _____ untrained teachers?
2. _____ graduates: of a university
   _____ : of a full high school course?
   _____ : of a part high school course?
   _____ : of primary education only?
3. _____ representatives of disadvantaged groups in society from whom teachers are recruited; i.e.
   _____ : ethnic minorities?
   _____ : remote groups?
   _____ : women?
4. _____ to receive a professional course
   _____ : towards a qualification?
   _____ : for specific skill/knowledge?

5. _____ to receive an academic course

   _____ : as content for their present teaching?

   _____ : as personal enrichment?

   _____ : for a qualification?

6. _____ to gain on successful completion of the course

   _____ : promotion?

   _____ : extra salary?

   _____ : some other professional reward?

   _____ : no professional reward?

7. _____ able to receive regular mail deliveries?

8. _____ accessible to tutorial assistance?

9. _____ within range of other students?

C. Distance learning process and their resource allocations

Introduction: All operations have their resource demands and costs. To assess them we can ask: How is distance learning to be financed? What staffing can be afforded? What equipment and technical staff will be required if particular media are chosen? Where will the operation be housed? What are the administrative needs to begin and continue its work efficiently? The answers follow from decisions about the original strategy and structures chosen:

Finance: While eventually distance learning system cost less to run than face-to-face learning, they may have high establishment costs if they are intended to grow. They need to minimize wastage of students who do not complete courses. If the system is serving the needs of government teachers, all its costs may be met by government. If however teachers are improving their qualifications privately, fees may be charged. Distance learning courses would be better motivated if successful teachers could expect higher salaries for their qualifications - another cost that would result.

Staffing: Staff are required for both the preparation of materials and for tutoring students. The same person may carry out both tasks - if a small group of teachers is involved and the programme is a particular project or if an 'integrated' approach is adopted. In a course team, several different staff members - writers, reviewers, researchers, media specialists - may be required, some permanent, some contracted to contribute; and others may be needed as tutors and to 'maintain' and update the study materials. On-the-spot tutors may have various tasks - commenting on assignments, conducting face-to-face study sessions, providing resource materials - but as their work is local, regional supervisors may be needed for such support services.

Media: Any particular medium consumes particular resources:

1. Printing: needs presses, with extra equipment if photographs are to be printed or colour used or materials are to be bound; it also needs competent printers able to cope with rushed deliveries.

2. Cassettes: need studios with equipment to record and multiply items; they need producers, speakers and actors sensitive to student audiences, and technicians to maintain equipment.

3. Broadcasting: usually requires access to another agency's resources of equipment and staff; there may be demand for 'public' quality of production. It needs staff able to produce programmes in cooperation with subject specialists and educationists.

Space and buildings: low space and building requirements offset high capital costs of production equipment; in 'integrated' institutions distance teaching may be added without major physical expansion.

Administration: Where teachers and other students are seeking qualifications, an administrative service for enrolment, fees, student records, examinations is required. Another administrative service is needed for control of materials, assignments and student services. The scale of such services reflects the scope and sacle of the distance learning system.

Checklist C

Are the resources allocated to your distance learning system sufficient for:

1. _____ financing substantial 'establishment' costs?

   _____ continuation, maintenance and expansion of programme?

2. _____ courses to be offered without fees from students?

3. _____ employing : a full-time permanent staff of course writers, media specialists, technical staff and administrative staff?

   _____ : a nucleus of permanent staff and also utilizing outside contract staff?

   _____ : an entirely part-time staff?

4. _____ recruiting regional support staff?

5. _____ installing and staffing your own printing equipment?

   _____ using an established (e.g. Government) printer?

   _____ contracting printing to an outside agency?

6. _____ installing and staffing a sound recording studio and reproduction equipment?

   _____ hiring sound recording and reproduction facilities?

   _____ utilizing existing facilities at no cost?

7. _____ establishing and staffing a radio broadcasting station?

   _____ buying time on network radio?

   _____ utilizing existing facilities at no cost?

8. _____ establishing and staffing a television broadcasting station?

   _____ installing and staffing a television recording studio and reproduction equipment?

   _____ buying time on network television?

   _____ hiring television recording and reproduction facilities?

   _____ utilizing existing facilities at no cost?

9. _____ obtaining a location for the distance learning system's activities?

   _____ building its physical plant to a sufficient level?

10. _____ maintaining an administrative service for?

    _____ : course production?

    _____ : distribution?

    _____ : student enrolment services?

    _____ : financial control?

    _____ : local student support services?

D. Inter-institutional co-ordination

Co-operation with other agencies can be a major resource of distance learning systems at various stages although it may also create difficulties and rivalries.

1. *Planning:* For materials production other institutions may provide contract writers and reviewers. For student support services (and for content of non-formal courses) local agricultural extension and health education workers as well as local education staff can have an input from their knowledge of local conditions.

2. *Materials production:* Collaboration with broadcasting and film-making organisations involves a mutual understanding between educators and media specialists of each others skills and needs.

3. *Student support:* Other educational agencies may supply tutors, centres where students meet, facilities for tapes, slides and films.

Checklist D

Does/will your distance learning system

1. _____ recruit part-time staff from other educational institutions for:
   - _____ : preparing course material?
   - _____ : tutoring?
2. _____ use physical facilities (classrooms, equipment) from other educational institutions:
   - _____ : to conduct courses with tutors?
   - _____ : for student with-student meetings?
   - _____ : for other purposes?
3. _____ depend on the following media organisations:
   - _____ : radio?
   - _____ : television?
   - _____ : satellite?
   - _____ : other?
4. for
   - _____ : advisory staff in materials development?
   - _____ : production?
   - _____ : materials?
5. _____ co-operate with international agencies:
   - _____ : UN agencies?
   - _____ : international aid agencies?
   - _____ : for distance learning

E. Management of production and distribution:

Introduction: The adoption of a particular strategy and set of structures for teacher education through distance learning that will produce and distribute materials, enrol and service students, and evaluate, modify and develop the system, also involves establishing an efficient management of serveral areas of activity. Managerial tasks will grow as the size and scope of the system extends; the selection of media necessitates efficient co-ordination of personnel and resources of very different kinds, the delivery of teaching

materials far afield, in areas of difficult terrain, taking account of the realities of postal and other communication systems will require imaginative care; away from the central unit, the provision of student support services will need its own support and supervision.

Scale of the system: Estimates need to be made of the number of students to be expected and the number of courses or programmes scheduled to be introduced over a projected period of time. Decisions about format will indicate the number of units of different materials to be produced, stored and despatched; and for which various staff will be needed.

Media: Different media give rise to different managerial tasks:

1. Printed material: a very small or very large operation can print it own material, on office duplicators or its own presses respectively; in between, printing may depend on a government printer with inflexible schedules or on high-cost commercial printers; time is needed to allow for external constraints and pressures.
2. Cassettes: may incur similar problems if outside studios and reproduction agencies are employed;
3. Broadcasting: a distance learning system is likely to be a 'client' of a broadcasting organisation, depending on it, meeting its schedules, using its personnel who may have little concern for distance learning.
4. Telecommunications: satellites are already used for distance education in the Region; computers which give access to information banks are within reach. These generate new managerial tasks.

Each new technology raises questions whether previous activities are obsolescent or whether some benefits can be tapped without an expensive transformation of an already efficient system.

Delivery systems: The adoption of any multi-media approach means that the logistics of delivery by each medium needs to be considered. Reliability of delivery may influence the choice of medium. If mails are erratic, broadcasting may be preferable; but broadcasts may be missed and cannot be retrieved unless a cassette later becomes available.

Student support services: If there is a local centre where a full set of study materials is deposited, and where recordings of broadcasts can be heard, the gaps in delivery can be covered. These services however require their own efficient management to supervise tutorial arrangements, arrange local supplies of materials and make local payments promptly. Not only management at the local level but also central supervision may be required.

Checklist E

Does/will your distance learning system:

1. _____ have forward projections of
   _____ : proposed enrolments?
   _____ : range of courses?
2. _____ have trained management staff for:
   _____ : institutional management?
   _____ : materials production?
   _____ : delivery services?
   _____ : local student services?

F. Extending the clientele/range of programme

Introduction

Unless a distance learning project is a single *ad hoc* operation, its future operations will need to be considered.

As part of that consideration, the success and efficiency of its current operation will need to be evaluated. Some means of evaluation, highlighting the factors which determine whether it has been beneficial and economical should be decided sufficiently early to measure the relevant factors. But if a programme is to live and grow, it may need more than the approval of the professional educators who run it. Distance education is a public form of teaching that needs public acceptance. That public needs to include, in the case of teacher education, the profession of teachers as a whole. In the case of tertiary level institutions, their public support needs to include acceptance by the community of college level institutions. Positive steps to win that acceptance may be necessary, for example through publications telling of the programme's achievements and its special capabilities.

Most distance learning systems in Asia and the Pacific are young and small; but they are vigorous and have promise for the future. Many are concerned first and foremost with upgrading the professional and academic educaiton of teachers. From there the directions of development can be onward towards more progressive stages of teacher education and upwards towards a wider clientele. Some systems are already pushing in these directions.

Other programmes for teachers: Teacher education that consists only of a short period of training followed by a career in the classroom or some administrative office is no longer considered sufficient for a whole career. At times education systems undergo rapid transformation. The principles on which such transformation is based need to be communicated to teachers. But teachers are in short supply and few can be taken from their classes to learn at out the new principles, the new methods, the changes in curriculum or the re-organisation of educational structures. Distance learning can hasten the processes of change by reaching teachers in their school settings where the changes will operate. It adds to the number of possibilities for disseminating innovation and change in education.

Extending the range of distance learning courses in teacher education can also encourage teachers to continue their professional education in mid-career. Their access to courses is an opportunity not only for their education authorities but for themselves, especially if their achievements as distance learners are rewarded with higher status and opportunities for promotion. Already several distance learning programmes in the region provide a variety of courses for teachers at different stages of their careers.

Other educators: Some courses designed originally for school teachers can transfer to health educators, agriculture extension workers, community and rural development personnel who operate in remote areas, would benefit from the renewal of their own knowledge and skills and could therefore benefit from distance learning. While in the interests of economy these might derive from courses originally intended for teachers, careful adaptation would be needed to ensure that the 'teaching' refers to adult learners. One group of "educators" who should not be overlooked are mothers of young children. Courses in early childhood education, reconstructed from courses for kindergarten teachers, might win ready acceptance among sufficiently educated mothers.

Other clients: The experience of courses in teacher education enables distance learning organisations to provide other kinds of courses for other clienteles. In doing so they should recognise that teachers may be in a more favourable position for distance learning than some other target groups. Teachers are members of an educational network which can provide them with tutors, places to meet for tutorials and practical resources. Their times of work and scheduled school holidays enable extra activities to be arranged for them; learning is a valued part of their professional lives so that their achievements in learning are likely to yield them status and promotion. Other groups may work within a less convenient framework and have less support. They may however have other resources and other motivations to encourage and sustain them, which need to be considered when their characteristics as a target clientele are described.

There are many groups in society who lack to access to the education which they need and desire because they live and work where they cannot attend classes. Distance learning, pioneered for teachers, may be the way by which society provides for their needs and at the same time enriches itself.

Checklist F

Does/will your distance learning systems

1. _____ expect to extend to other kinds of teacher education
   _____ : pre-service?
   _____ : in-service?
2. _____ expect to extend to other kinds of educators, e.g.
   _____ : health educators?
   _____ : agricultural extension workers?

_____ : other community workers?

_____ : mothers?

_____ : others?

3. _____ expect to extend to non-teachers?

4. _____ obtain feedback on

_____ : the quality of course materials?

_____ : difficulties in the delivery of material?

_____ : quality of support services?

_____ : public acceptance of distance learning?

II. GUIDELINES ON PROCESSES FOR DEVELOPING MATERIALS

These guidelines aim to assist course writers and their associates in the preparation of distance learning materials. To illustrate some points extracts are taken from the group's exemplar materials which appear in a companion volume.

A. Establishing needs

In establishing the needs of learners at least two analyses may be undertaken. Firstly, the learners' setting may be analysed to determine their geographical location, the facilities available, etc.

Secondly, the learners' backgrounds may be analysed in order to establish existing levels of knowledge and skill, socio-economic status, social and cultural constraints which may exist, and the likely motivation of the potential learners.

Thus, the present situation may be examined in terms of learners' characteristics and needs, and these may in turn be linked with future plans, in terms of desired end goals. Information for conducting such analyses may be available from official reports or surveys or it may perhaps be available from less official sources. However, it is important to have information available about learners if the planning of materials is to be effective. Analyses of learners' needs may also carefully consider the best mode of teaching and learning to meet those needs.

Geographical locations and distance from institutions will have obvious effects on modes of learning; and literacy levels, will affect any formal learning requirements.

Checklist A

1. Is data available on

   the learner's : setting?

   _____ : background?

2. Will the mode of learning be influenced by

   _____ : location?

   _____ : distance from institutions?

   _____ : literacy levels?

B. Setting objectives

General and specific objectives may be established for the course, for each subject within the course, and for each unit within a particular subject.

Criteria for successful achievement of objectives should be established and communicated to learners.

The overall or general objectives may be broken down into a hierarchy of more specific objectives.

The objectives may be stated in terms of learners' behaviour so that the expected outcomes of learning are clear.

The behaviour required of learners in order to achieve objectives should be measurable and observable. The objectives should be expressed in operational terms using action words, and they should cover the three learning domains: cognitive, psycho-motor and affective.

It is important to include specific objectives which will assist in the achievement by learners of the overall or general objectives. By breaking down the objectives and making them quite specific the learning activities suitable for enabling learners to achieve the objectives may also be identified.

Learning activities should be planned and sequential; thus attention may be given to what should be learned first. By stating objectives quite specifically and explicitly it is easier to correctly plan the sequence of learning activities. It is important that learning, as well as being sequential, should be suitably spaced out and that learners be able to achieve objectives statisfactorily before being required to proceed to future learning activities.

Learners may be required to complete a pre-test before commencing any course, or subject or unit.

The pre-test enables the level and abilities of the target group to be established in order to ensure that the programme will be suitable, likley to motivate learners, and not be too difficult or too simple.

The pre-test should assess skills required for satisfactory entry into the programme and as a basis for successful performance in the programme. The pre-test should provide an indication of present behaviour of learners and facilitate a comparison with expected terminal behaviour as stated in the objectives of the programme.

Checklist B

Have you devised and included:

1. _____ the overall goal?
   _____ specific objectives?

2. Objectives
   (a) in behavioural terms?
   (b) that are measurable?
   (c) that are operational (in action words)?
   (d) covering all learning domains: cognitive, psycho-motor, affective?

3. A pre-test to
   – administer before commencement of programme?
   – test skills required?
   – assess present level/behaviour?
   – ensure programme suitability?

C. Resources and Constraints

In the preparation, selection, use and renewal of distance learning materials there are obviously considerations of finance and the consequent availability (or otherwise) of the necessary people and other resources.

Planning should take account of the learning resources actually available such as instructional materials, suitable buildings, time limits, qualified teachers, materials writers, developers, etc.

Utilisation of other resources also needs to be considered as there may be people and facilities available which can be utilised in the development of, and especially the implementation of, materials.

Funding available to the programme should be clearly understood and plans must be realistic in terms of available funds.

It is important to establish ancillary service needs, including printing and media production facilities, broad-casting facilities, communication facilities, transportation, etc. as neglect of these needs may make programme implementation difficult. Any short-term deficiencies should be recognised and the constraints they impose need to be taken into account.

The programme and materials developed should be cost-effective, for example, more effective than traditional methods of offering such a programme, or able to achieve economically, objectives beyond the capability of other means of teaching and learning.

Staffing needs in the development of materials also require careful consideration.

Compilation of materials may be the work of an individual or of a course team.

A small teram approach may provide more effective results by facilitating contributions from

- subject specialists
- instructional developers (with knowledge of language)
- curriculum specialists
- representative of the target group or those associated with the target group
- others, as appropriate.

Where individuals develop courses, they may need the services of consultants for the skill which they lack.

The role of other organizations working in the particular area needs to be considered as they may have useful services, materials, etc. which can be incorporated in the design.

Are there other materials already available which would suit this course, subject or unit?

Checklist C

1. _____ funds available?
2. _____ personnel available : subject matter specialist?
   _____ : instructional developer?

_____ : curriculum specialist?
_____ : representative of the target group?

3. _____ existing print materials available?
_____ existing non-print resources available?
4. _____ cost projections and cost-effectiveness studies available?
5. _____ ancillary service needs being met i.e. : printing?
_____ : media production?
_____ : broadcasting?
_____ : communication?
_____ : transportation?
_____ : any other?

D. Materials Preparation

Many factors may be considered in the selection and development of materials for use in distance learning:

1. Presentation of materials should be attractive to the learner with material not too crawded, headings and sub-headings used, underlining of key points, illustrations, appropriate colour to distinguish sections, etc.

For example, the New Zealand exemplar materials on Human Development has an illustration at the top of each topic. Objectives and concepts are clearly stated and additional references are given to the learner.

2. The purpose of materials received needs to be quickly clear to learners in order to avoid confusion. Learners need to be able to quickly understand where materials fit into their course, subject or unit. It should also be clear to learners what materials they will need and whether all needed materials should have been received.

For example, the following section of the Thai examplar establishes the purpose of the programme;

> "Our programme today is the first of the series entitled "fundamentals of education". In this section, we will discuss educational management in the Thai society. The series is broken into three programmes. The first deals with welfare education, the second non-formal education, and the third adult education and education for monks and novices."

3. Outcomes of materials may be made clear to the learner through well defined and suitably specific statements of objectives made in terms of learner behaviours. Checklist B has questions about objectives to which the following may be added as objectives are being drafted:

Does each of your specific objectives:

- state a student activity?
- produce an observable outcome?
- produce a measurable outcome (this may be an indirect measure in some cases)?
- specify the performance unambiguously and precisely?

- specify the conditions under which the performance will occur?
- contain the content of only one clear outcome?
- specify criteria and standards of success?
- form a logical development from what was known and understood by your student before the lesson?
- represent a desirable and important outcome (this may seem like (and is) a value judgement but objectives can sometimes be very trivial and mechanistic)?
- relate to the larger considerations of the course – the goals and the overall aim?

If your answers are vague and uncertain, redrafting is likely to be needed.

4. The level of materials should be appropriate for the learners and take account of learners' situations, backgrounds and abilities.

The following is an example of material for teachers in-service education from the Australian exemplar:

> "There are two people in the VTOCK whose needs must be considered – Fred, the student, and you, the tutor; let us look at teach in turn.
>
> **Fred, the student**
>
> You may remember that Fred is an adult returning to study, he has commitments to his family, community and job, as well as his commitment to studying.
>
> He has returned to study for a purpose, or a complexity or purposes – some of which he is aware of and some of which he is not, some of which he will acknowledge and some of which he won't. . . . .
>
> Let us compare this to the case of a child or adolescent attending primary or secondary school. Fred Junior has no choice as to whether or not he will attend school. He is therefore less likely to have clearly defined expectations of his studies than Fred Senior who has chosen – or appears to have chosen – to study . . .
>
> Adults therefore return to study with certain expectations which are of two main types –
> . the experiences they will go through
> . the changes these experiences will cause in themselves, their situation and their environment.

5. Materials should be meaningful to learners with relevant example and illustrations provided which utilise and extend their experience and background knowledge.

A good example can be quoted from the Thai programmed distance learning material where "System thinking" is explained:

> "When we think of a school system naturally we would like to think about the school in terms of the staff, pupils, class rooms, curriculum and extra-mural activities. We would certainly wish to know how the teachers, pupils and curriculum interact, and how the facilities in school are related to the extra-mural activities. This type of thinking is called "system thinking". This is a meaningful example for the learner who is a teacher and knows all aspects of education.

6. The language and style of materials is more appropriate if it is direct and personal, not pompous or childish or the learners will feel talked down to.

For example the Philippines exemplar uses suitably direct language and has a personal style:

> "This module has the information and skills practice to make you capable to teach your child just at the right age for training in pre-school education ready for grade one.
>
> You can finish this module in your own time and alone. What you need to learn is in the text but there is a Resource Section for your reference needs.
>
> Reading up to this point is a sign of interest – GREAT!"

7. The materials should be interactive enabling the learner to become actively involved in learning through the use of questions, exercises, case studies, tasks, etc. which engage the learner and provide a stimulus to learning.

For example, in the Australian exemplar there were "self-help" question to encourage interaction between the learner and the materials. Feedback is also provided regarding the possible responses which the learner might make.

8. Materials used in distance learning are more effective if they are self-instructional and ensure that teaching and learning occur through the use of study guides, self-help questions, provision of feedback, etc so that the materials provide 'teaching' not merely information.

The Australian exemplar provides an interesting illustration of this point in its section on 'what tone should you convey?'

> As we indicated earlier, Fred could be returning to study with considerable trepidation. . .
>
> You should therefore aim to make your responses to his assignment work as supportive as possible.
>
> This means picking out those aspects of his work which display his strengths and encouraging him to build on these. It also means identifying his weaknesses and suggesting way of improvement . . .
>
> And try to avoid the implication that a mistake, or a number of mistakes, made by Fred in a particular assignment, is an indication that Fred is a fool generally.
>
> Let us look again at the example of Fred's response to the question "Define momentum", which, as you may remember, was "Momentum is how fast things travel".
>
> Possible variations in the tone of your comment are shown in the following examples:
>
> (a) "Nonsense! This is basic physics which anyone attempting this course should know."
>
> (b) "Incorrect. Check your references."
>
> (c) "This is partially correct, but velocity is only one component of momentum. In order to check what else is involved, I suggest you . . . "
>
> (d) "You are quite right in saying that velocity is involved when measuring momentum. However, there are other factors, and to establish what these are, I suggest that you . . . "

(e) "A very good answer. There is just one slight omission and, to see what that is, you might like to . . . "

self-help question

Give each of the comments about a rating out of 5 in each of the columns in the table below:

	Encouragement	Discouragement	Misleading impression
(a)			
(b)			
(c)			
(d)			
(e)			

If I had done this rating exercise, (c), (d) and (e) would have rated highly in encouragement, with (d) higher than (c), and (e) higher than (d); (a) would come top in discouragement with (b) running second; (e) would lead the field in giving a misleading impression (in this instance, of having done much better than was the case).

9. Materials may enhance creativity in the learner and encourage questioning of ideas and attitudes, rather than memorisation of facts.

The exemplar material from New Zealand, "Human Development" stimulates its learners' creativity by encouraging them to apply ideas devised in a European or North American context to material specifically about New Zealand's different cultural and multi-cultural situation.

10. The materials should be factually accurate in all details otherwise learners may become frustrated by information that is incorrect or misleading.

Here is an example we take from the Philippines exemplar SLIMM Area V – Government thrusts for national development. "Notwithstanding the POPCOM efforts which made possible the slowing down our rate of increase at .14 per cent (i.e. 2.78% from the previous five years down to 2.64% this last five years – *Bulletin Today*, January 19, 1981), we still need drastic moves to control population increase. You can help very much in this drive."

11. The structure and sequence of materials need to make it clear to the learner the order of the materials so that learning may proceed logically from one step to another.

For example to Thai exemplar illustrates this point in Frame 41:

24. "We have this far learnt
What a system is
What the type of systems are
How a system functions
and what the learning processes and activities used in the study of systems are.

If you are not very sure of any of the above areas, please go back to the pages where you start and read them once more before proceeding to the next page.

12. The materials may provide for reinforcement of learning by referring back to particular concepts, linking parts of materials with other parts, and systematically developing learners' understanding.

For example, the New Zealand exemplar provides an illustration of this point on page 31:

> "To continue the life stages of religious (and moral) development, return to the course text, Turner and Helms, pp. 281-285, Moral and Religious Values in Adolescence. You may also like to read on into the next section pp. 285-288, Political Values."

13. Reading abilities of learners need to be considered when developing materials for use at a distance. References should not be too lengthy and careful choice of words and tlerms used can improve readability of materials. Several tests are available which might be applied to materials in order to estimate their readability.

In the Indian exemplar, in the sub-topic in the displacement of women from avenues of employment, the learner will not face any difficulty in reading the material. Here are a few lines from the text:

> There is a strange imbalance in the distribution of educational effort and resources among different sections of the population. On the one hand, there is a sharp increase in the number of illiterate women particularly in the rural areas and on the other hand, there is a rapid expansion of the education of women mostly in the cities.
>
> In rural India, women have played a distinctive and accepted role in the process of earning a livelihood for the family. The economic needs and pressures have compelled many of the urban women also to come out of their homes in search of suitable employment.

14. Materials are more effective if supportive, encouraging and challenging so that learners' motivation is maintained and not reduced by information poorly presented or which is too difficult or too easy. The learners may be encouraged to think for themselves within a framework which provides for checks on learning and which emphasises positive aspects of tasks performed.

Examples of these points are provided in the following materials from Sri Lanka and Indonesia:

15. The materials may provide for feedback to learners by use of self-help questions and activities with suggested solutions or responses, and by rapid responses to work done in more formal assignments, tests, etc. The learner might also receive feedback from additional contact with tutors.

The extract from the Australian exemplar illustrating point viii) above provides learners with feedback through the use of a self-help question, followed by comments included in the next paragraph of the materials.

16. Distance learning materials may also require feedback from teachers who are using the materials in order to ensure that course evaluation and review, and necessary rewriting can be completed most effectively.

(SRI LANKA)

Unit	*Learning Process*	*Outcomes*	*Notes*
Introduction to Educational Psychology (6 hours)	Explain a complicated social situation such as a staff in a school and how important it is to have a knowledge of psychology to achieve the ends? Take concrete situations and discuss. Provide a definition of Psychology and show how it breaks up into branches? Discuss the various methods of child study and get them to apply these methods in sample cases.	The student-teachers understand tthat school problems can be solved more effectively with a knowledge of Educational Psychology. They realise that this is an area of study that can be of personal use to them. They come to know the methods of child study.	(Extra columns now added to implement distance learning approach)

(INDONESIA)

No.	*General Objectives*	*Topic*	*Sub Topic*	*MEDIA / RADIO*					
				Title	*Prog. No.*	*Special Objectives*	*Material*	*Resources*	*Format*
4.	The teachers have the basic knowlege of teaching meaning!	4.2 Meaning of sentences	4.2.1 Meaning of incomplete sentences	Meaning of incomplete sentences	I.I. 24	The teachers can: – explain what an incomplete sentence is. – guide their students to understand the meaning of an incomplete sentence	– incomplete sentences – incomplete sentence structure – meaning of incomplete sentences	– Bahasa Indonesia Belajar Membasa Dam Menulis I a, I b, I c. – Pedomar Guru I	– Narration – Dialogue

17. Materials need to provide for regular assessment of learning in order to ensure that learning is occurring and to provide information to learners and tutors about the achievement of objectives.

For example, in the Thai exemplar this point is illustrated:

(1)

1. There are many ways of defining the word 'System'.

   In a simple way, a system can be defined as *A set or group of objects with emphasis on the relationships between the objects and the relationships between their attributes* (characteristics and functions).

(2)

2. In systems, we are dealing with
   (i) a set of components or elements,
   (ii) a set of relations,

and (iii) a set of objectives.

(3)

3. In other words, a system consits of sets of _____ ,
   _____ and _____ ,
   and their interactions to form a meaningful whole.

(4)

3. elements, relations, objectives.

(5)

4. Which one of the following sets is not a property of a system?

   (a) A set of objectives
   (b) A set of relationships
   (c) A set of non-related ideas
   (d) A set of elements

(6)

4. Choice (c). Non-related ideas do not normally form a system. Any collection of things which shows no relationship or interaction among them does not comprise a system.

18. The internal structure of materials may be examined for

- directiveness, to ensure that teaching is structured in order to appropriately direct the thinking of learners.

- Referability, so that learners may easily refer back in their materials to check earlier statements and information.
- Locatability, so that the learners are clear on their 'position' in their learning process.
- Content density, because with higher content density materials become more difficult for the learner to readily accept and understand.

An example of directiveness is provided in the New Zealand exemplar when learners are provided with specific reading references designed to ensure further progress towards stated objectives.

Another example of directiveness is provided on page of the Thai programmed text. In frame 29 "Systems Relationships" are given. In frame 30 structural relationships are explained, and in frame 31 there is a question to see if these relationships have been understood.

An example of referability and locatability is provided in the SLIMM programme from the Philippines in the Practicum and Formative Evaluation on pp. 18-20.

19. The medium for facilitating learning should be carefully considered. Choice(s) may be made in the light of media availability, accessibility and suitability.

Possible choices of media might include printed materials, radio, television, slides, films, video-tapes, audio-cassettes, learning kits, etc. Printed materials might include modules, programmed texts, correspondence lessons, etc. Each has to own characteristics:

Printed materials: The importance of printed-based material, whether it be for distance learning or in the normal teaching situation, cannot be over-emphasized.

Advantages: Relatively quick, easy and cheap to produce, convenient to use and above all provides a permanent record which may be referred to. Probably at its best as an aid to cognitive learning.

Disadvantages: Its very permanence may cause problems in updating. It is not easy to change attitudes by print alone (effective learning) and print is obviously limited as a means of teaching practical skills (psycho-motor learning).

Text Books: These retain their importance.

Advantages: Since these already exist in their thousands, covering a wide range and depth of subject material, why spend time, effort and money in trying to duplicate the information they contain?

Disadvantages: Few of these books are written with specific learning objectives in mind, or for use alone as a sole means of learning. If used as the main source of factual information in a distance learning course (as they sometimes are), then a student's guide should be prepared in conjunction with them. This should not only give the student guidance through the text and, where necessary, supply further explanation, etc. It is essential that this provides the involvement necessary to sustain the student's enthusiasm. Availability, cost and age of books must also be considered.

Radio

Advantages: Mainly those associated with the spoken word; can cope with a wide range of subjects. Of specific value in courses such as English language, drama, poetry, especially if a student can follow the spoken word in a text. Can be friendly and personal and hence act as a motivator. Can stimulate affective learning and can respond quickly to audience demands.

Disadvantages: Unless it can be recorded and replayed, gives only a fleeting impression. Difficult to take notes while listening. Cost/difficulties of production/time required and difficulties in using radio networks.

Television

Advantages: Similar to those of radio, plus the visual element; especially useful when it is necessary to demonstrate movement, e.g. to draw students' attention to processes by slow motion. Also useful in personalizing learning and in teaching in the effective domain.

Disadvantages: Mainly on economic grounds – costs are prohibitive for the great majority of courses/ high level of professionalism required in production and time required to produce a series may well be one year and over. Virtually impossible to take notes while watching. Students not likely to have replay facilities for videotaped programmes.

Combination of media: At this point the reader is asked to consider for himself the combination of media available of distance learning in his country and consider: when media are used in combination? What would be the advantages and disadvantages? What would be the criteria for media selection?

20. Materials need to demonstrate the principles they are expounding to learners (teachers) and not be seen by learners as failing to implement the very approaches which are the subject of the materials. (We should practice what we preach)

In the Australian exemplar in unit 5 of the Elective course for part-time Teacher Training, under the heading "What tone should you convey?" We find that the whole unit is written in the style advocated by the writers.

21. Orientation of learners to the materials is critical for their successful use.

Materials should clearly indicate what is expected from the learners, their attendance requirements, delivery system to be used, support available to learners including contact, and provision of feedback and counselling, etc.

Study skills required should not be overlooked in the orientation of learners to the programme.

22. Materials should be subjected to rigorous evaluation, including consultation with experts in distance learning and should be trialled with a small sample of the target group.

Checklist D

(1) Have you achieved selection and development in the

_____ : a layout and presentation that is : systematic?
_____ : well organised?
_____ : attractive?
_____ : well spaced?
_____ : a statement on purpose of materials that is clear?
_____ : well defined objectives?
_____ : material appropriate to the level of the learner?
_____ : material subject to a personalized style?
_____ : interactive activities?
_____ : motivating materials?
_____ : a self-instructional approach?
_____ : stimulus for creativity?
_____ : factual accuracy?
_____ : direct learning?
_____ : recognition of the learner's reading abilities?
_____ : support, encouragement and challenge?
_____ : feedback that you provide?
_____ : feedback from the student?
_____ : learning that is assessed?
_____ : sound internal structure?
_____ : appropriate media that are
_____ : available?
_____ : accessible?
_____ : suitable?
_____ : consistency with your original principles?
_____ : orientation of the learners to the materials?
_____ : subjected to evaluation?
_____ : consultation where necessary for students?

E. Trialling and consultation:

Trialling of materials may be best done by 'units' or 'modules' (etc.), as they are developed, in order to streamline the development process. The validity of materials may be considered in terms of how well they enable learners' needs to be met as indicated by the achievement of objectives which are designed to meet those needs.

The use of experts in distance learning for purposes of consultation is recommended for materials preparation, selection, use and renewal. Trialling of materials may occur with a small sample of the target group.

Checklist E

Do your trials of the materials involve:

_____ : sample target groups?
_____ : use of experts?

F. Evaluation and revision of materials

Re-writing and adaptation of materials needs to respond to results experienced in trialling. Revision of materials by occurring on a continuing basis can respond to feedback received from evaluation procedures incorporated into the materials, and derived from support systems.

Feedback may be gained from both the learners using the programme materials, and those actually involved in the materials development process such as curriculum, subject, and instructional system specialists. Monitoring of the programme is most effective if it occurs regularly and is part of both formative and summative evaluation of learners' progress. Results of programme evaluation should be *used* to improve the programme or course, and not be derived merely to satisfy appropriate development procedures.

As part of the continuing evaluation and revision of materials it may be useful to state trialling conducted and the responses made in the revised materials.

Checklist F

Do your procedures for trialling and consultation:

_____ : take place continuously?
_____ : obtain feedback from learners, writers and other personnel involved?
_____ : use the results of evaluation to improve the materials?
_____ : indicate that revisions result from trialling conducted and response?

G. Implementation

Should the programme materials be used with a pilot group or should they be made available to all leraners in the traget group? It is appropriate to pilot materials with a sample, especially if the target group is large but often these are presures to introduce the programme as quickly as possible.

If a pilot project is possible, it will identify strengths and weakness which can be considered prior to full implementaton of the materials produced.

Time scheduling for materials distribution, programming, and provision of feedback should be carefully considered and monitored. On-going introduction and administration of the programme including full use of the delivery system, support personnel, conduct of evaluation both formative and summative, and revision of materials according to information received from evaluation procedures are best done if firmly built into the programme.

Careful consideration needs to be given to ways in which problems that arise, of an academic or administrative nature, are to be handled.

Tutors, supervisors and other field level workers may provide contact with learners and be available when needed.

There should be a regular flow of information between learners and supervisors and supervisors and institution. The information flow should be as free as necessary to ensure the progress of learners.

Co-operation with any collaborating agencies may be monitored to ensure effective working of the delivery system.

Checklist G

Do your course writers:

_____ contact pilot studies with the target group?
_____ respond to pilot study results?
_____ introduce and conduct programme before the results of pilot studies are available?
_____ conduct on-going evaluation and revision of materials?

APEID PUBLICATIONS RELATED TO TEACHER EDUCATION

1. *Exploring new directions in teacher education: re-orienting teacher education for rural development (Teacher Education 2) 1977*
2. *Preparing teachers for education in rural development - a handbook, 1977*
3. *Continuing education for teacher educators - advanced-level workshops, 1978*
4. *Continuing education for teacher educators: handbook of suggestions for organizing advanced-level workshops, 1978*
5. *Developing instructional modules for teacher education: a handbook, 1978*
6. *Developing instructional modules for teacher education: selected exemplar modules, 1978*
7. *Continuing education for teacher educators: identified needs and plans for national workshops, 1979*
8. *Policy studies in Asia - the training of educational personnel: India, Nepal, Pakistan, Philippines, Thailand, 1979*
9. *Teacher education: directions of change, 1979*
10. *Universalizing education: selected innovative experiences - New techniques for preparing educational personnel, 1979*
11. *Universalizing education: strategies for development and use of instructional materials, 1979*
12. *Designing instructional materials for general education and teacher training: a portfolio of experiences in Asia and Oceania, 1980*
13. *New personnel profiles in relation to changes in society and educational systems, 1980*
14. *In-service teacher education: developing innovatory strategies and instructional materials; report, 1980*
15. *Preparing educational personnel: Training methodologies based on locally available learning resources, 1980*
16. *Social change and new profiles of educational personnel, 1981*

The Asian Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through over one hundred national centres which they have associated for this purpose with APEID.

The 21 countries in Asia and the Pacific participating in APEID are: Afghanistan, Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Socialist Republic of Viet Nam, Sri Lanka and Thailand.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the Unesco Regional Office for Education in Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

The eight programme areas under which the APEID activities are organized during the third cycle (1982-1986) are:

1. Universalization of education: access to education at first level by both formal and non-formal means;
2. Education for promotion of scientific and technological competence and creativity;
3. Education and work;
4. Education and rural development;
5. Education and urban development;
6. Educational technology with stress on mass media and low-cost instructional materials;
7. Professional support services and training of educational personnel;
8. Co-operative studies, reflections and research related to educational development and future orientations.